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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/588,941	08/07/2006	Louis Mazuy	13816/10000	9781
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KENYON & KENYON LLP			MONDT, JOHANNES P	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/588,941	MAZUY, LOUIS	
	<b>Examiner</b>	<b>Art Unit</b>	
	JOHANNES P. MONDT	3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 19 November 2008.  
 2a) This action is **FINAL**.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 8-14 is/are pending in the application.  
 4a) Of the above claim(s) 12-14 is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 8-11 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 07 August 2006 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>1 Form PTO-1440</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application
	6) <input type="checkbox"/> Other: _____ .

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of the Group I invention, claims 8-11, in the reply filed on 11/19/08 is acknowledged. Accordingly, claims 12-14, have been withdrawn from consideration. The restriction requirement is herewith made FINAL.

### ***Information Disclosure Statement***

2. The examiner has considered those items listed in the Information Disclosure Statement not lined through in the Form PTO-1449 that is herewith enclosed as acknowledgment. Inclusion of said lined-through items does not comply with 37 C.F.R. 1.98 (a) (3) (i) given that no English translation nor any explanation of relevance was found in the submission of the listing.

### ***Drawings***

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "4" has been used to designate both inner and outer tubular sheaths. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and

informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. ***Claims 8-11*** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claimed device, “a device for moving a bar for controlling reactivity in a core of a pressurized water nuclear reactor inside a vessel enclosing the reactor core closed off by a vessel head” as introduced by pre-amble as defined by claim 8 comprises a control rod, an electromechanical arrangement and a sealed containment, the latter comprising an adapter tube, a tubular mechanism housing and a tubular sheath (only), while according to the bulk of the claim language the sealed containment is recited to be “attached to the vessel head in a penetration opening”. Therefore, a feature not positively recited (“vessel head”) appears to define the structure of the claimed device, and thus it is not clear whether or not the vessel head is part of the device, i.e., whether the claim is drawn to a subcombination excluding said vessel head or to a combination including said vessel head. Thereby the metes and bounds of the claimed invention are left vague and ill-defined, rendering the claims indefinite.

6. ***Claims 8-11*** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which

Art Unit: 3663

applicant regards as the invention. In particular, “the axial outward extension” (line 15 of claim 8) lacks antecedent basis.

7.     **Claims 8-11** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, “the axis of the housing” (lines 20-21 of claim 8) lacks antecedent basis.

8.     **Claims 8-11** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, “for it to be attached by screwing” (line 22 of claim 8) creates uncertainty whether or not the attachment referred to in the quoted limitation “to be attached” is a structural limitation of the device. When should it be attached, and if so under what conditions? The consequent uncertainty in the metes and bounds renders the claims indefinite.

### ***Claim Rejections - 35 USC § 102***

9.     The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10.    **Claims 8-10** are rejected under 35 U.S.C. 102(b) as being anticipated by Prior Art as Admitted by Applicant in the Specification, henceforth referred to as Applicant’s Admitted Prior Art or “AAPA”.

As Applicant's Admitted Prior Art, Applicant teaches (Figure 1, page 2, line 21 – page 4, line 15) and page 8, lines 10-11, page 8, line 20 – page 10, line 17) a device **1** (page 8, l. 29+) *capable* of moving a bar for controlling reactivity in a core of a pressurized water nuclear reactor inside a vessel enclosing the reactor core closed off by a vessel head (page 8, lines 22-25), comprising:

a control rod **6** (page 9, lines 3-12 and Figure 1) furnished with an arrangement capable of attaching the control bar at one axial end (loc.cit.);

an electromechanical arrangement (comprising magnetic coils **5a**, **5b**, **5c**, **7a** and **7b**: page 8, line 31 – col. 9, l. 1, and Figure 1) *capable* of moving the control rod in an axial direction (loc.cit.); and

a sealed containment **2/3/4** (Figure 1 and page 8, lines 25-27) that is *capable* of being used as attached to the vessel head in a penetration opening comprising:

an adapter tube **2** (Figure 1 and page 89, lines 28-30 and page 10, lines 1-3) welded into the opening of the vessel head (page 8, lines 22-25);

a tubular mechanism housing **3** (Figure 1 and page 8, lines 28+) connected to the adapter (interpreted as "adapter tube") on which is mounted the electromagnetic arrangement for moving the control rod (loc.cit.); and

a tubular sheath **4** (Figure 1, page 8, lines 28-30) *configured to have the capability* to allow the control rod to be axially moved between two extreme positions, closed at a first end and open at a second end (Figure 1 and page 3, lines 10-15), attached in the axial outward extension of the housing (interpreted as "tubular mechanism housing") (Figure 1 and page 3, lines 15-20), by the

tubular sheath's second, open, end, wherein the adapter **2** and the mechanism housing **3** are made in a single piece (met in Fig.1, while "made in a single piece", as far as the limitation is not merely a product-by-process limitation and as such has any patentable component, in broadest reasonable interpretation meaning: "abutting and attached"), and the housing **3** comprises, at an axial end opposite the adapter **2** (bottom end facing the adapter) an internal tapping in the form of a tapped portion along the inside of **3c** (Figure 1 and page 9, line 20+: internal tapping met by "tapped part") and a sealing lip **3c** in a shape of a portion of a torus (**3c** is "torus-shaped sealing lip" because it has a toroidal topology: Figure 1 and page 10, line 4-6) surrounding the housing (Figure 1) and made in an external surface having a cylindrical free joining surface having as an axis the axis of the housing (Figure 1 and page 3, lines 1-3), and that the tubular sheath **4** comprises, at the second, open, end, a thread along the side of **4a** facing **3a**: Fig. 1) matching the tapping **3a** of the housing *capable* of being attached by screwing in a coaxial position into the housing (Figure 1 and page 9, lines 19-23), and a sealing lip **4b** (Figure 1 and page 9, lines 19-25) in a shape of a portion of a torus (being of toroidal topology) of dimensions matching those of the sealing lip **3b** of the housing having a cylindrical free joining end surface having as axis the sheath axis (Figure 1 and page 9, lines 25-33), the sealing lips of housing and sheath having free ends facing one another in final structure (including screwing and welding) (Figure 1 and page 9, lines 21- page 10, line 13), while the weld seam is annular with filler metal coaxial with housing and sheath (page 2, l. 25+,

especially l. 28 for “filler metal”) while examiner takes official notice that depth parallel to the axis of the joint and width perpendicular to the latter that are inherently “substantially” constant along the circumference for any “quality weld” as disclosed to be conventional for welding co-axial cylindrical parts in an axial direction. In this regard applicant is reminded that “substantially” is a very broad limitation (MPEP 2173.05(b) and case law referred to therein).

Furthermore, applicant is reminded that the limitations “for moving a bar for controlling reactivity in a core of a pressurized water nuclear reactor inside a vessel enclosing the reactor core closed off by a vessel head” (lines 1-3), “for attaching the control bar at one axial end” (lines 4-5), “for moving the control rod in an axial direction” (lines 6-7), “attached to the vessel head” (line 8), “welded into the opening of the vessel head” (page 8) “for moving the control rod” (line 12), and “configured to allow the control rod to be axially moved between two extreme positions” (lines 13-14) limit intended use only. Applicant is reminded that intended use and other types of functional language must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. *In re Casey*, 152 USPQ 235 (CCPA 1967); *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). In the underlying case the capability of performing the intended use is in evidence or indicated in the description of the admitted prior art (see the various references to column and line numbers provided above in the text of the rejection).

*On claim 9:* the tubular-shaped adapter **2** and the mechanism housing **3** are in a coaxial disposition (page 2, line 25 – page 3, line 2). The limitation “butt welded” is a product-by-process limitation. The limitation is only of patentable weight in as much as the method distinguishes the final structure, and to the extent not impacting final structure are taken to be product-by-process limitations and non-limiting. A product by process claim is directed to the product per se, no matter how they are actually made. See *In re Fessman*, 180 USPQ 324, 326 (CCPA 1974); *In re Marosi et al*, 218 USPQ 289, 292 (Fed. Cir. 1983), and *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985), all of which make clear that it is the patentability of the final structure of the product “gleaned” from the process steps that must be determined in a “product-by-process” claim, and not the patentability of the process. See also MPEP 2113. Moreover, an old or obvious product produced by a new method is not a patentable product, whether claimed in “product by process” claims or not. In the underlying case the structural implication fails to further limit the invention as recited by claim 8 in this regard, in view of the limitation “wherein the adapter and the housing are made in a single piece” (lines 16-17 of claim 8); while the limitation “to form an integrated housing attached to the vessel head by the adapter tube” is a limitation of intended use. Applicant is reminded that intended use and other types of functional language must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. *In re Casey*, 152 USPQ 235 (CCPA 1967); *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). In the underlying case the integrated housing

is met by the adapter and housing that are made in a single piece. No further structural implications ensue from the limitation other than that the structure is capable to be used for attaching a vessel head to the integrated housing by the adapter, which is met given the proper dimensions of a vessel head. It is noted in this regard that the claim language does not positively recite “vessel head” as being comprised in the claimed device.

*On claim 10:* applicant further admits that the adapter is made of a nickel alloy (page 2, lines 25-30), while applicant also disclosed within the context of a discussion of the disadvantage of the mounting method of the prior art that the invention addresses that in the prior art nickel alloy for the adaptor and stainless steel for the mechanism housing are conventional material selections (see page 10, lines 6-11).

#### ***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. ***Claim 11*** is rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant’s Admitted Prior Art (AAPA) as applied to claim 8, in view of Gul (US 6,457,857 B1). As detailed above, claim 10 is anticipated by AAPA. AAPA does not teach the further limitation on material embodiment of the tubular sheath. However, given the material selection of stainless steel for the tubular mechanism housing, it would have been obvious to select stainless steel also for the tubular sheath so as to

reduce thermal stress between said housing and said sheath, as known by those of ordinary skill in the art of components providing housing in the metal art, as witnessed for instance by Gul, who, in a patent on housing and support for a device subject to variable temperature (class 387, subclass 208; i.e., housing or support for thermal measuring and testing apparatus), comprising a sleeve 40 for a tubular sheath 52 positioned so as to abut the inner wall of said sleeve, teaches both sleeve and sheath to be made of the same material, thereby ensuring sleeve and sheath to have the same coefficient of thermal expansion so as not to worsen thermal stress (col. 7, l. 33-37 and Figure 5A). Considering especially the variety of thermal conditions under which the device by AAPA has to operate (variable state of operation of the nuclear reactor) it would have been entirely obvious to one of ordinary skill in the art to select the same stainless steel material for the tubular sheath as for the housing so as not to cause additional thermal stress. *Motivation* to include the teaching by Gul in this regard in the device by AAPA derives immediately from the resulting avoidance of additional thermal stress. The combination has reasonable expectation of success because nothing more than the selection of a material similar to both the material of the tubular sheath in the prior art and identical to material in abutting and neighboring components is involved in implementing the combination. Because the sealing lip of the integrated housing and the sealing lip of the tubular sheath are part of said housing and sheath, respectively, the teaching by Gul immediately applies to the selection of the same, stainless steel, material embodiment for both sealing lips as well, because Gul teaches *the* sleeve and *the* sheath to be made of stainless steel, while any other choice of material for either

lips would defeat the stated reason for selecting the same material for both, as discussed supra.

***Conclusion***

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Cayment et al (US 5,432,828); Weems et al (US 5,367,768); Frisch et al (US 3,607,629); and IDS items as considered.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHANNES P. MONDT whose telephone number is (571)272-1919. The examiner can normally be reached on 7:30 - 17:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack W. Keith can be reached on 571-272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Johannes P Mondt/  
Primary Examiner, Art Unit 3663